

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1 (Currently amended). Circuitry for generating a sequence of probable symbols from a sequence of received symbols using Reduced State Sequence Estimation, comprising:

butterfly circuitry for computing terms in butterfly structure of $sm_1' = \min\{sm_1 + m, sm_2 - m\}$ and $sm_2' = \min\{sm_1 - m, sm_2 + m\}$; and

circuitry for computing multiple path metrics between a first state and a second state responsive to the received symbols and reference constellation symbols and ~~determining a best scenario~~ calculating a best path metric at the second state using the output said butterfly circuitry.

2 (Original). The circuitry of claim 1 and further comprising circuitry for rotating said received symbols by a predetermined angle.

3 (Original). The circuitry of claim 1 and further comprising circuitry for rotating said reference constellation symbols by a predetermined angle.

4 (Currently amended). The circuitry of claims 2 ~~and~~ or 3 wherein said predetermined angle is $(2k+1)*\pi/8$ with k being an whole number.

5 (Original). The circuitry of claim 1 and wherein said reference constellation is an 8-PSK constellation, circuitry for expressing axis symbols of the constellation as a function of diagonal symbols in order to assure symmetrical properties for use of the butterfly circuitry.

6 (Currently amended). A method of generating a sequence of probable symbols from a sequence of received symbols using Reduced State Sequence Estimation, comprising the steps of:

computing multiple path metrics between a first state and a second state responsive to said sequence of received symbols using a butterfly ~~structure of circuit~~ for computing $sm_1' = \min\{sm_1 + m, sm_2 - m\}$ and $sm_2' = \min\{sm_1 - m, sm_2 + m\}$; and ~~determining a best scenario~~ calculating a best path metric at the second state using the output of said butterfly ~~structure~~ circuit.

7 (Original). The method of claim 6 and further comprising the step of rotating said received symbols by a predetermined angle.

8 (Original). The method of claim 6 and further comprising the step of rotating said reference constellation symbols by a predetermined angle.

9 (Currently amended). The method of claims 7 ~~and~~ or 8 wherein said predetermined angle is $(2k+1)*\pi/8$ with k being a whole number.

10 (Original). The method of claim 6 wherein the reference constellation is an 8-PSK constellation, and further comprising the step of expressing axis symbols of the constellation as a function of diagonal symbols in order to assure symmetrical properties for use of the butterfly circuitry.